


Please amend the claims as follows:


In the Claims:

Claim 1 (currently amended):

A pedal- and motor-assist power system for a bicycle which has, at least one drive wheel, and a bicycle frame with front and rear ends, said system comprising:

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- a) a pedal section comprising:
 - i. first and second pedal members;
 - ii. a crank shaft connecting the pedal members;
 - iii. a crank housing in which the crank shaft is located;
 - b) a sprocket section having a chain-and-sprocket drive connection to said drive wheel;
 - c) a motor section;
 - d) a speed-reducing gear section connecting to said motor section and having a gear section drive output;
 - e) a power assist drive section comprising a power assist drive member concentrically mounted around said crank shaft and having a power-assist drive connection between the gear section drive output and the sprocket section;
 - f) said system being characterized in that the sprocket section has a first pedal overruning drive connection with said pedal section and the power-assist drive connection has a second overruning drive connection;

whereby said bicycle is able to operate in four operating modes, namely:

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- i. a power-assist mode where a bicycle rider is pedaling to supply power, and the power-assist section is providing power;
 - ii. a pedal-only mode where power is being supplied solely by pedaling the bicycle;
 - iii. the power-assist-only mode where the bicycle rider is not providing power by pedaling, but power is supplied by the power output section; and
 - iv. a coasting no-power mode where the bicycle is traveling with the pedal section stationary, and no power is being supplied by either the pedal section or the power-assist drive section, and

g) said power-assist drive member having a fixed drive connection to the sprocket section and the power-assist-overrunning drive connection is between the power-assist drive member and the gear section drive output.

Claim 2 (cancelled)

Claim 3 (cancelled)

Claim 4 (cancelled)

Claim 5 (cancelled)

Claim 6 (currently amended):

The system as recited in claim [5] 22, wherein the second end portion of the power-assist drive member has a fixed power connection to the drive sprocket, and the first end portion of the power-assist drive member

connects with the gear section drive output through said power-assist overrunning drive connection.

Claim 7 (original):

The system as recited in claim 6, wherein said power-assist drive member is rotatably mounted on bearings that have an operative load-bearing relationship with said crank housing, and said crank shaft is at least in part supported by bearings in load-bearing relationship with said power-assist drive member so that said power-assist drive member and said crank shaft are rotatable relative to one another.

Claim 8 (cancelled)

Claim 9 (currently amended):

The system as recited in claim [8] 23, wherein said motor is located proximate to an upper rear portion of said frame, and said speed-reducing gear section is located closely adjacent to said crank housing, so that a first distance of the motor to the speed-reducing gear section is substantially greater than a distance from the speed-reducing gear section to the crank housing,

Claim 10 (cancelled)

Claim 11 (cancelled)

Claim 12 (cancelled)

Claim 13 (withdrawn)

Claim 14 (withdrawn)

Claim 15 (withdrawn)

Claim 16 (withdrawn)

Claim 17 (withdrawn)

Claim 18 (withdrawn)

Claim 19 (withdrawn)

Claim 20 (withdrawn)


 Claim 21 (re-presented – formerly claim 4):

A pedal- and motor-assist power system for a bicycle which has, at least one drive wheel, and a bicycle frame with front and rear ends and first and second sides, said system comprising:

- a) a pedal section comprising:
 - i. first and second pedal members;
 - ii. a crank shaft connecting the pedal members;
 - iii. a crank housing in which the crank shaft is located;
- b) a sprocket section having a chain-and-sprocket drive connection to said drive wheel;
- c) a motor section;
- d) a speed-reducing gear section connecting to said motor section and having a gear section drive output;

- e) a power assist drive section comprising a power assist drive member concentrically mounted around said crank shaft and having a power-assist drive connection between the gear section drive output and the sprocket section;
- f) said system being characterized in that the sprocket section has a first pedal overrunning drive connection with said pedal section and the power-assist drive connection has a second over-running drive connection;


whereby said bicycle is able to operate in four operating modes, namely:

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- i. a power-assist mode where a bicycle rider is pedaling to supply power, and the power-assist section is providing power;
 - ii. a pedal-only mode where power is being supplied solely by pedaling the bicycle;
 - iii. the power-assist-only mode where the bicycle rider is not providing power by pedaling, but power is supplied by the power output section;
 - iv. a coasting no-power mode where the bicycle is traveling with the pedal section stationary, and no power is being supplied by either the pedal section or the power-assist drive section, and
 - g) said sprocket section and said first pedal member being nearer to a second side of the frame, and said power-assist drive member having a second end portion that connects to said sprocket drive, and a first end portion that is nearer to a first side of the frame, said first end portion connecting through

the power-assist overrunning drive connection to the gear section drive output.


Claim 22 (re-presented – formerly claim 5):

A pedal- and motor-assist power system for a bicycle which has, at least one drive wheel, and a bicycle frame with front and rear ends, said system comprising:

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- a) a pedal section comprising:
 - i. first and second pedal members;
 - ii. a crank shaft connecting the pedal members;
 - iii. a crank housing in which the crank shaft is located;
 - b) a sprocket section having a chain-and-sprocket drive connection to said drive wheel;
 - c) a motor section;
 - d) a speed-reducing gear section connecting to said motor section and having a gear section drive output;
 - e) a power assist drive section comprising a power assist drive member concentrically mounted around said crank shaft and having a power-assist drive connection between the gear section drive output and the sprocket section;
 - f) said system being characterized in that the sprocket section has a first pedal overrunning drive connection with said pedal section and the power-assist drive connection has a second overrunning drive connection;

whereby said bicycle is able to operate in four operating modes, namely:


- i. a power-assist mode where a bicycle rider is pedaling to supply power, and the power-assist section is providing power;
- ii. a pedal-only mode where power is being supplied solely by pedaling the bicycle;
- iii. the power-assist-only mode where the bicycle rider is not providing power by pedaling, but power is supplied by the power output section;
- iv. a coasting no-power mode where the bicycle is traveling with the pedal section stationary, and no power is being supplied by either the pedal section or the power-assist drive section, and

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- g) said power-assist drive member having a tubular configuration with first and second power-assist member portions on opposite sides of the bicycle, said power-assist drive member and said crank housing being positioned concentrically around a center axis of said crank shaft.

Claim 23 (re-presented – formerly claim 8):

A pedal- and motor-assist power system for a bicycle which has, at least one drive wheel, and a bicycle frame with front and rear ends, said system comprising:

- a) a pedal section comprising:
 - i. first and second pedal members;
 - ii. a crank shaft connecting the pedal members;
 - iii. a crank housing in which the crank shaft is located;


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- b) a sprocket section having a chain-and-sprocket drive connection to said drive wheel;
 - c) a motor section;
 - d) a speed-reducing gear section connecting to said motor section and having a gear section drive output;
 - e) a power assist drive section comprising a power assist drive member having a power-assist drive connection between the gear section drive output and the sprocket section;
 - f) said system being characterized in that the sprocket section has a first pedal overrunning drive connection with said pedal section and the power-assist drive connection has a second overrunning drive connection;

whereby said bicycle is able to operate in four operating modes, namely:

- i. a power-assist mode where a bicycle rider is pedaling to supply power, and the power-assist section is providing power;
- ii. a pedal-only mode where power is being supplied solely by pedaling the bicycle;
- iii. the power-assist-only mode where the bicycle rider is not providing power by pedaling, but power is supplied by the power output section; and
- iv. a coasting no-power mode where the bicycle is traveling with the pedal section stationary, and no power is being supplied by either the pedal section or the power-assist drive section,

- g) said motor being a high-speed motor that is driven by petroleum-based fuel and operates at least 1000 RPM, said motor having a sheave-and-belt drive connection with said speed-reducing gear section, whereby tension forces exerted on the sheave-and-belt drive from the motor to the speed-reducing gear section are substantially less than forces imposed in the drive connection between the speed-reducing gear section and the power-assist drive member.

Claim 24 (new):




A pedal- and motor-assist power system for a bicycle which has, at least one drive wheel, and a bicycle frame with front and rear ends, said system comprising:

- a) a pedal section comprising:
 - i. first and second pedal members;
 - ii. a crank shaft connecting the pedal members;
 - iii. a crank housing in which the crank shaft is located;
- b) a sprocket section having a chain-and-sprocket drive connection to said drive wheel;
- c) a motor section;
- d) a speed-reducing gear section connecting to said motor section and having a gear section drive output;
- e) a power assist drive section comprising a power assist drive member which extends through said crank housing and is mounted concentrically around said crank shaft, said power assist drive section being operatively connected between said speed reducing gear section and said sprocket section;


f) said system being characterized in that there is a first over-running drive connection that is operatively connected between said sprocket section and said pedal section, so that said pedal section is able to remain stationary while said sprocket section is rotating, and there is a second over-running drive connection operatively positioned at said power assist drive section, so that said sprocket section can be rotated by power from said pedal section independently of said speed reducing gear section or with power provided from said speed reducing gear section;

whereby said bicycle is able to operate in four operating modes, namely:

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- i. a power-assist mode where a bicycle rider is pedaling to supply power, and the power-assist section is providing power;
 - ii. a pedal-only mode where power is being supplied solely by pedaling the bicycle;
 - iii. the power-assist-only mode where the bicycle rider is not providing power by pedaling, but power is supplied by the power output section; and
 - iv. a coasting no-power mode where the bicycle is traveling with the pedal section stationary, and no power is being supplied by either the pedal section or the power-assist drive section.


Claim 25 (new):

A pedal- and motor-assist power system for a bicycle which has, at least one drive wheel, and a bicycle frame with front and rear ends, said system comprising:


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- a) a pedal section comprising:
 - i. first and second pedal members;
 - ii. a crank shaft connecting the pedal members;
 - iii. a crank housing in which the crank shaft is located;
 - b) a sprocket section having a chain-and-sprocket drive connection to said drive wheel;
 - c) a speed-reducing gear section connecting to said motor section and having a gear section drive output;
 - d) a power assist drive section comprising a power assist drive member concentrically mounted around said crank shaft and having a power-assist drive connection between the gear section drive output and the sprocket section;
 - e) a high-speed motor that is driven by petroleum-based fuel and operates at least 1000 RPM, said motor having a sheave-and-belt drive connection with said speed-reducing gear section, whereby tension forces exerted on the sheave-and-belt drive from the motor to the speed-reducing gear section are substantially less than forces imposed in the drive connection between the speed-reducing gear section and the power-assist drive member.

Claim 26 (new):

A pedal- and motor-assist power system for a bicycle which has, at least one drive wheel, and a bicycle frame with front and rear ends, said system comprising:

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- a) a pedal section comprising:
 - i. first and second pedal members;
 - ii. a pedal drive housing which is mounted in the frame at a drive location, with said pedal members being mounted to said housing;
 - b) a sprocket section at said drive location and having a drive connection to said drive wheel;
 - c) a motor section mounted at a motor location of said bicycle that is spaced from said drive location;
 - d) a speed-reducing gear section connecting to said motor section and having a gear section drive output, said speed reducing gear section being located at a speed reducing gear section location that is spaced from said drive location and motor location;
 - e) a power assist drive section comprising a power assist drive member concentrically mounted around said crank shaft and having a power-assist drive connection between the gear section drive output and the sprocket section;
 - f) said system being characterized in that the sprocket section has a first pedal overrunning drive connection with said pedal section and the power-assist drive connection has a second overrunning drive connection;

whereby said bicycle is able to operate in four operating modes, namely:

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- i. a power-assist mode where a bicycle rider is pedaling to supply power, and the power-assist section is providing power;
 - ii. a pedal-only mode where power is being supplied solely by pedaling the bicycle;
 - iii. the power-assist-only mode where the bicycle rider is not providing power by pedaling, but power is supplied by the power output section; and
 - iv. a coasting no-power mode where the bicycle is traveling with the pedal section stationary, and no power is being supplied by either the pedal section or the power-assist drive section,
- g) said power-assist drive member having a fixed drive connection to the sprocket section and the power-assist-overrunning drive connection is between the power-assist drive member and the gear section drive output.
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